30cc. of the filtrate are evaporated to dryness in a platinum basin. The residue is gently ignited until all the magnesium acetate is decomposed. Water containing carbonic acid is then added, and the whole again evaporated to dryness, in order to render the magnesium carbonate formed during the process of ignition more granular, as in this state it is easier to wash. The magnesium sulphate is extracted from the carbonate by means of hot water. After separating the small quantity of lime which may happen to be present in the filtrate, the magnesia contained in it is estimated as pyrophosphate. From the quantity of the latter the quantity of free sulphuric acid contained in the vinegar may be calculated. The author gives the results of some analyses of mixtures of pure dilute acetic and sulphuric acids of known composition, which testify to the value of his method. The small quantities of magnesium salts usually occurring in vinegar may influence the results, but the error is so slight that it may safely be neglected.

—F. M.

Monthly Patent List.

ENGLISH APPLICATIONS.

1885.

I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

8190 J. C. Mewburn, London—Communicated by F. C. E. Simon, France. Improvements in evaporating, distilling, and refrigerating apparatus. July 6

8225 H. C. Paterson, Glasgow. Improvements in smoke-consuming furnaces. July 7

8301 T. C. Fawcett, Halifax. Improvements in machinery for making saggers, crucibles, and similar moulds, also applicable to the moulds of brick-making machines. July 9

8353 A. E. Robinson, Edgbaston. Improvements in appliances for producing and condensing vapours. July 10

8527 W. R. Lake, London—Communicated by J. W. Hyatt, United States. Improvements in filtering apparatus. July 11

8615 R. Kullig, London. Improvements in Royle's condensation apparatus. Complete specification. July 16

8630 E. Edwards, London—Communicated by L. Rohrmann and M. Hiller, Germany. Improvements in apparatus for effecting the absorption of gases or vapours by liquids. July 16

II.—FUEL, GAS, AND LIGHT.

7581 E. Capitaine and O. Brünler, London. Improvements in the production of compressed gaseous compound for use in gas motors and for other purposes, and apparatus therefor. Complete specification. June 22

7615 J. D. Bodwell, London. Improvement in apparatus for the combustion of liquid fuel. Complete specification. June 23

7613 L. A. Groth, London—Communicated by F. Garavagnoe & Co., Italy. A new or improved gas carburetting apparatus. June 23

7791 S. Butler, London. Improvements in apparatus for mixing and heating materials for the manufacture of patent fuel. June 26

7815 R. Dempster, Manchester. Improvements in the construction of stand pipes for gas retorts. June 27

7893 T. G. Marsh, Failsworth, Lancashire. Improvements in gas-lighting and heating. June 30

8005 W. A. McIntosh Valon, London. Improvements in machinery or apparatus for the manufacture of compressed artificial fuel. July 1

8097 H. J. W. Raphael and J. Syme, London. Improvements in means for preventing nuisance from smoke, and for utilising the gaseous products of combustion from furnaces or the like for lighting or other purposes. July 3

8516 T. Chappell and C. H. Adames, Blackstock Road. Improvements in the manufacture of fuel. July 14

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, Etc.

7503 A. M. Clark, London—Communicated by A. Cozé, France. Improvements in retorts for the distillation of coal and other solid matters, and in apparatus connected therewith. June 20

8184 L. T. Wright, London. Improvements in or connected with the hydraulic mains used in the distillation of coal. Complete specification. July 6.

IV.—COLOURING MATTERS AND DYES.

7491 H. J. Haddan, London—Communicated by Dr. R. Worms, Saxony. A new manufacture of blue colouring matter. June 19

7630 C. E. Avery, London. The improved manufacture of extracts and liquors of logwood. Complete specification. June 23

7734 L. Heffter, London. Drying alizarin and dissolving it afterwards. June 25

7814 H. H. Lake, London—Communicated by Wirth & Co., agents for A. Liebmann, Germany. Improvements in the manufacture of naphthylamine sulpho-acid. June 27

8211 T. Frusher, London. Improved manufacture of ink from waste dye liquors. July 7

VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

8143 A. Whowell, London. Improvements in apparatus employed for bleaching purposes. July 13

VII.—ACIDS, ALKALIS, AND SALTS.

7514 G. H. Bolton, Liverpool. Improved fastening device applicable to, or improvements in, heads and lids or covers of caustic soda or other drums, etc., in which a nearly cylindrical part is required to be quickly fastened and loosed. June 20

7657 E. W. Parnell and J. Simpson, Liverpool. Improvements in the separation of sulphuretted hydrogen from nitrogen. June 24

7691 R. T. Freeman, London. An improvement in nitrous oxide gas or other compressible gases or gas bottles. June 21

7831 T. Capper, London—Communicated by Dr. S. Pick, Austria. Improvements in apparatus for making bicarbonate of sodium. June 27

7841 O. N. Witt, London. A process for the manufacture of hydrochloric acid adapted to be used in connection with the ammonia soda process. June 27

7867 A. Brin, London. Improvements in the manufacture of bioxide of barium and its use in making oxygenated water for bleaching or for other purposes. June 29

8071 C. C. Springer, Manchester. Improvements in the manufacture of sulphurous acid gas (SO_2), and in the apparatus employed in such manufacture, July 3

8191 B. J. B. Mills, London—Communicated by J. M. Duncan, United States. Improvements in means or apparatus employed in the manufacture of salt from brine, and in producing strong brine for the manufacture of soda ash, and other chemicals. July 6

8260 T. Robinson, Glasgow. Improvements in the manufacture of alum and sulphate of alumina. July 8

8301 T. B. Saunders and A. V. Saunders, Bradford. Improvements in the method of, and apparatus for, generating dry hydrochloric acid gas for the carbonisation of vegetable matter mixed with wool and woollen rags. July 9

8382 H. Richardson, Jarrow-on-Tyne. Improvements in the manufacture of hydrate, sulphate, and other salts of alumina. July 11

8392 W. P. Thompson, Liverpool—Communicated by B. Osann, Germany. A new or improved process of manufacturing caustic alkalis during the purification of iron by the Thomas-Gilchrist process. Complete specification. July 11

8110 E. W. Parnell and J. Simpson, Liverpool. Improvements in obtaining sulphuretted hydrogen from sulphide of ammonium. July 13

8170 F. Maxwell-Lyte, London. Improvements in the production of chlorine and apparatus therefor. July 13

8199 W. Allen, London. Improvements in acid taps and valves and seats for chemical works. July 11

8511 H. Leplay, London. Improvements in decarbonating the carbonates of strontia and baryta, and in apparatus therefor. Complete specification. July 11

8602 N. Glendinning, Liverpool. Improvements in the treatment of copper liquors. July 16

8623 S. H. Johnson and C. C. Hutchinson, London. Improvements in preparing milk of lime, and in apparatus to be used therefor, and for other such like purposes. July 16

VIII.—GLASS, POTTERY, AND EARTHENWARE.

7937 C. C. Thompson, London. Improvements in machines for making pottery, glass-ware, and articles of all kinds from soft plastic materials which are capable of being moulded. Complete specification. June 30

8551 W. P. Thompson, London—Communicated by C. Potts and A. Potts, United States. Improvements in machinery applicable for finely dividing and tempering clay. Complete specification. July 15

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

7912 W. B. Smith, London. Improvements in binding bricks and other building blocks. June 30

8153 W. P. Thompson, Liverpool—Communicated by R. Bosse and F. Wolters, Germany. Improved process for rendering cements hydraulic, that is to say, capable of setting and hardening under water. July 6

8317 T. C. Fawcett, Halifax. Improvements connected with machinery for making bricks, tiles, pipes, and tubes. July 10

8361 J. Matthew, London. Improvements in the treatment of stone in order to produce a glazed surface thereto. July 10

8508 R. Stanley, London. Improvements in machinery for pressing and moulding bricks, tiles, and the like. July 14

X.—METALLURGY, MINING, Etc.

7510 P. Jenson, London—Communicated by J. Omholt and The Chemische Fabrik Gossnitz, Germany. Improvements in the continuous manufacture of light metals by application of electrolysis and in apparatus therefor. June 19

7571 G. A. Jarvis and A. E. Tucker, Shifnal. Improvements in Bessemer or basic converter bottoms, plugs, or blocks. June 22

7597 J. Y. Johnson, London—Communicated by E. Deligny, France. An improved process for purifying copper precipitates. June 22

7710 J. M. H. Munro, London. Improvements in the treatment of basic cinder. June 25

7762 E. Robbins, London. Improvements in plain, ornamental, decorative, and constructive works manufactured from slag. June 25

7802 E. Fletcher, London. Improvements in the treatment of pig iron for eliminating impurities during the process of its conversion into malleable iron or steel, also applicable for analogous purposes. June 26

7805 J. Platt, Sheffield. Improvements in furnaces for metallurgical and other purposes. June 26

7816 T. Hampton, Manchester. Improvements in the manufacture of steel ingots. June 29

7858 H. von Grousilliers, London. A process for producing aluminium (Al) from chloride of aluminium (Al_2Cl_6) by employing pressure. Complete specification. June 29

7866 J. Y. Johnson, London—Communicated by J. Jacobi, Austria. Method of obtaining phosphatic slags of high titre by the Thomas-Gilchrist process. June 29

7880 J. P. Reitz, Bockenheim, Germany. Acid-proof gun-metal. June 29

8003 P. C. Bunn, London. The utilisation of the by-products or waste of lead ores for the manufacture of pigments therefrom. July 1

8039 H. Bain, London. Tinning and finishing tin and terne plates and in machinery used therefor. July 2

8161 W. E. Gedge, London—Communicated by G. Guillemin, France. A novel alloy intended to replace copper in its principal applications. July 6

8269 T. Nordenfelt, London—Communicated by C. G. Wittenström, Sweden. Improvements in the manufacture of castings from wrought iron and steel. Complete specifications. July 8

8295 P. J. Davies, London. Improvements in apparatus for lead burning. July 8

8318 T. Bayley, Birmingham. Improvements in the treatment and utilisation of scrap tin plates. July 9

8336 C. D. Abel, London—Communicated by F. C. Glaser, Germany. Manufacture of blocks of combined ingot iron and puddled or faggot iron. July 9

8360 E. Watkins, Eagleville, California. Improved welding compound and process of preparing the same. July 10

8118 J. Y. Johnson, London—Communicated by E. Deligny, France. An improved process for purifying copper precipitates. July 11

8178 J. T. King, Liverpool—Communicated by S. T. Owens, United States. Improvements in metallurgical furnaces. Complete specification. July 11

8181 A. H. Emery, London. Improvements in wrought metal plates for use in the construction of boilers, ships, and other bolted or rivetted work, and in the manufacture and treatment of the same. July 11

8187 A. H. Emery, London. Improvements in wrought metal columns, beams, girders, and other members designed to bear compression or transverse loads in bridges, buildings, and other structures, and in the manufacture and treatment of the same to increase their rigidity and strength. July 11

8574 H. R. Cassel, London. An improved process and apparatus for treating metals, alloys, and especially auriferous ores, by electrolysis. July 15

XI.—FATS, OILS, AND SOAP MANUFACTURE.

7645 T. Berliner, London. Process and apparatus for extracting fat from bones and other fatty matter. June 23

7701 J. Y. Johnson, London—Communicated by C. Goublier, France. Improvements in the manufacture of candles. June 24

7972 O. C. Hagemann, London. Improvements in the purification of glycerine. July 1

7973 O. C. Hagemann, London. Improvements in purifying and concentrating glycerine, applicable also to the concentration of other matters. July 1

8051 O. C. Hagemann, London. Improvements in the treatment of soap leys to obtain products therefrom. July 2

8250 F. Walton, London. Improvements in the manufacture of oxidised or solidified oil, and in the application of the same to wires and strands. July 7

8403 A. Michel, London. Improvements in apparatus for treating fatty matters in order to obtain fatty acids and glycerine therefrom. July 11

XII.—PAINTS, VARNISHES, AND RESINS.

7485 A. McLean, London. Improvements in the manufacture of pigments. June 19

7493 H. H. Lake, London—Communicated by S. Roebuck, United States. An improved composition or paint for coating brickwork, ironwork, and the bottoms of ships, and for similar purposes. Complete specification. June 19

8003 P. C. Bunn, London. The utilisation of the by-products or waste of lead ores for the manufacture of pigments therefrom. July 1

8059 T. Terrell, London. Improvements in the preparation of pigments from sulphate of iron. July 2

XIII.—TANNING, LEATHER, GLUE, AND SIZE.

7561 W. Paul, London. Improvements in machinery for boarding, softening, and graining leather. Complete specification. June 20

7818 A. Johnson, Liverpool. Improvements in leather, and in the manufacture or treating of the same. June 27

7915 T. R. Clark, London. Improved process for the manufacture of glazed leather. Complete specification. June 30

8626 G. F. Redfern, London—Communicated by A. Buckingham, Belgium. The manufacture of an improved material to be used as a substitute for leather, and for other purposes. July 16

XV.—SUGAR, STARCH, GUM, Etc.

7533 A. Ralu (fils), J. Grathvohl and H. A. Brown, London. Solidifying syrups and molasses, especially those of sorgho and sugar cane, by mixing them with substances adapted for distillation. June 20

7590 E. Hoefling, London. Improvements in the manufacture of gelatine. June 22

7617 J. H. Brinjes, London. Improvements in or connected with vacuum apparatus employed in the manufacture or refining of sugar, or for other purposes. June 23

7745 C. W. Guy, London. Improvements in sugar-cane crushing mills. June 25

7914 F. Wilhöft, London. Improvements in vulcanised soft rubber, and process of making the same. Complete specification. June 30

8000 A. Seyberlich and A. Trampedach, London. Improvements in the manufacture of crystallised grape sugar. July 1

8279 H. H. Lake, London—Communicated by F. O. Matthiessen, United States. Improvements relating to the filtration and decolourisation of sugar liquor, or syrup, and to apparatus therefor. July 8

XVI.—BREWING, WINES, SPIRITS, Etc.

7534 A. Ralu (fils), J. Grathvohl and H. A. Brown, London. Utilising as a commercial and industrial substance, sweet potatoes and yams (Ypomea, Batatos, and Dioscorea), by means of desiccation and pulverisation. June 20

7535 A. Ralu (fils), J. Grathvohl and H. A. Browne, London. Distilling spirits from desiccated or triturated sweet potatoes and yams. June 20

7736 T. J. Canty, London. An improved self-acting apparatus for heating and circulating worts in brewers' mash tuns. June 25

7744 E. Luck, London. Improvements in or additions to apparatus for the manufacture of perfumed or flavoured spirit. June 25

7788 L. Cuisinier, Liverpool. A new and useful process for preventing from any possible alterations the saccharification of amylaceous substances by malt. June 26

7826 T. P. Hinde, Darlington. Boiling malt liquors, etc., by the application of gas. June 27

7835 A. A. Vale, London—Communicated by The Chemische Fabriks Action Gesellschaft, Germany. A method of rendering spirits unfit for use as liquors for drinking. June 27

8142 G. Smallman, Newnham. The better ventilating and heating of hop and malt kilns. July 6

8563 S. Rhoden, London. Improvements in brewers' and distillers' mash tuns. July 15

XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, Etc.

7703 B. D. Healey, Liverpool. Improvements in furnaces for burning town refuse and decomposing the fumes therefrom. June 25

7714 P. Smith, Fallowfield, Manchester. Improvements in the means and apparatus for the separation of solids and semi-solids from sewage and other liquids. June 25

7759 J. M. H. Munro, S. H. Johnson, and C. C. Hutchinson, London. Improvements in the treatment of sewage. June 25

7958 W. H. Hartland, Glasgow. Improved means for filtering and purifying water. June 30

8058 W. B. G. Bennett, London. Improvements in the method of and arrangements for treating and disposing of sewage, and purifying foul water. July 2

8084 S. Hubbard James, Tottenham. Improvements in the treatment of sewage. July 3

8162 W. Hucks, London. Improvement in the separation or filtration of solid and liquid matter. July 6

8282 O. F. Öberg, London. A new mode of manufacturing filtering material for purifying water from micro-organisms. Complete specification. July 8

8106 W. D. Borland, Stowmarket. Improvements in disinfectants. July 11

XIX.—PAPER, PASTEBOARD, Etc.

7495 H. J. Haddan, London—Communicated by C. H. Voigt, Saxony. Process for preparing fodder from certain waste products obtained in the manufacture of cellulose or paper pulp. June 19

7772 J. Petrie and F. W. Petrie, Rochdale. Improvements in machinery for cleansing "Esparto" and other grass and fibrous material used in the manufacture of paper. June 26

7886 J. G. Stephens, London. Improved method of and apparatus or machinery for cleaning and separating the pulpy matters from the fibres of leaves and plants. June 29

7932 C. H. Roeckner and F. L. Roeckner, London. Improvements in pulp strainers. June 30

8012 A. J. Boult, London—Communicated by W. C. Zeidler, Canada. Improvements in the treatment of celluloid, xylonite, and of similar substances. Complete specification. July 1

8073 C. C. Springer, Manchester. Improvements in the construction of boilers for treating wood and other fibre in the manufacture of paper and other pulp. July 3

8130 T. R. Shillito, London—Communicated by C. Arnold, Germany. Improvements in the manufacture of paper parchment or vegetable parchment. Complete specification. July 4

8214 G. M. Peters, London. Improvements in machines for manufacturing cartridge shells from paper, wood pulp, etc. Complete specification. July 7

8396 H. Mason, London. A machine for the manufacture of parchment paper. July 11

8434 J. Wood and R. Penman, Edinburgh. An improved pulp strainer for straining pulp before it passes to the paper-making machine. July 13

8616 F. X. Black, London. Improvements in pulp-screening machinery. Complete specification. July 16

XX.—FINE CHEMICALS, ALKALOIDS, ESSENCES, and EXTRACTS.

7527 H. N. Draper, Rathmines. The preparation of a colourless or decolourised solution of iodine. June 20

8523 H. E. Newton, London—Communicated by G. Michaelis and W. T. Mayer, United States. Improvements in the manufacture of chloroform and acetic acid or purified acetates. Complete specification. July 14

8597 E. Kent, London. Iodine colloid for external medicinal use. July 16

XXI.—EXPLOSIVES, MATCHES, Etc.

7610 A. J. Boult, London—Communicated by W. F. Wolff and M. de Förster, Germany. An improved method of charging hollow projectiles with compressed granular explosive substances. Complete specification. June 23

7725 T. Smith, London. Safety dynamite shells, or shells loaded with other dangerous explosives. June 25

XXII.—ANALYTICAL CHEMISTRY.

8610 C. G. P. de Laval, London. A new method of and apparatus for determining the quantity of fat in milk. July 16

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*ENGLISH PATENTS PUBLISHED.**

APPLIED FOR DURING 1884 and 1885.

I.—GENERAL PLANT, APPARATUS, and MACHINERY.

1884.

10812 J. Mactear. Furnaces for chemical processes. 6d

1885.

5903 O. Imray—Communicated by H. B. Scott. An improvement in filter presses. 4d

6053 E. Burton. Furnaces for the combustion or destruction of refuse. 6d

II.—FUEL, GAS, and LIGHT.

1884.

11040 A. F. Link—Communicated by T. Bauer. Improvements in the construction of coke ovens. 6d

11513 T. Nordenfelt—Communicated by L. Nobel, C. G. Wittenström, E. Faustman and P. Ostberg. Apparatus to be employed in burning naphtha or other volatile liquid, applicable especially for melting metals which are difficult of fusion. 8d

1885.

802 A. J. Boult—Communicated by J. Hanlon. The manufacture of illuminating gas from hydrocarbon or other oils, and apparatus therefor. 8d

5143 F. Leslie and J. A. Wanklyn. Improvements in the treatment of gas, and in the materials and apparatus employed therein. 2d

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, Etc.

1884.

10790 J. Dempster. Apparatus for extracting tar and ammonia from the gases of blast furnaces. 6d

11202 J. Coates. Process and apparatus for extracting benzol from the gases evolved in sealed or closed coke ovens. 4d

Reprint.

12291 (1848). R. A. Smith. Coal tar. 4d

IV.—COLOURING MATTERS and DYES.

1884.

11159 J. H. Johnson—Communicated by H. Caro. Manufacture of colouring matters from tetramethyldiamidobenzophenone and analogous ketone bases. 4d

V.—TEXTILES, COTTON, WOOL, SILK, Etc.

1884.

10194 A. Wilkinson. Treating wood and vegetable fibres fo the manufacture of textile fabrics. 4d

VI.—DYEING, CALICO PRINTING, PAPER STAINING, and BLEACHING.

1884.

11333 G. Lunge. The application of chloride of lime for bleaching and other purposes. 4d

11456. F. A. Gatty. Dyeing certain colours on cotton yarns and fabrics. 4d.

11824 W. R. Lake—Communicated by — Corron. Dyeing textile or fibrous materials. 6d.

1885.

2008 A. Whowell. Improved agitator and boiler for bleaching and finishing purposes. 4d

VII.—ACIDS, ALKALIS, and SALTS.

1884.

9317 W. Spence—Communicated by J. J. Thyss. Apparatus for the production of sulphuric acid. 6d

9761 A. C. Henderson—Communicated by L. Labois. Method and apparatus for extracting sulphur from pyrites. 6d

10080 W. Robinson. Method of making sodium carbonate and certain bye-products. 2d

10138 C. M. Pielsticker. The manufacture of hydrate of strontia from sulphate of strontia. 4d

10651 J. Mactear. Making granulated crystalline carbonate of soda, and apparatus therefor. 6d

10813 J. Mactear. Process for obtaining or recovering manganese oxide from manganese sulphate produced in obtaining chlorine. 2d.

10860 H. E. Newton—Communicated by A. Nobel and G. Fehrenbach. Manufacture of anhydrous sulphuric acid. 6d

10871 C. D. Abel—Communicated by La Société de Javel. Method and apparatus for recovering the nitrous products in the manufacture of sulphuric acid. 6d

11161 T. Macfarlane. The manufacture of sulphide of sodium and sulphide of zinc. 4d

12159 J. Clare. Packages for containing caustic soda and other articles, and lids or covers for the same. 4d

13015 J. H. Johnson—Communicated by T. Macfarlane. The manufacture of sulphide of zinc, and the obtainment of sulphuretted hydrogen and sulphurous acid as products of the said manufacture. 4d.

5216 W. P. Thompson—Communicated by L. Imperatori. Process for the production of phosphate of soda or of potash from basic process slags, etc. 2d

Reprints.

13775 (1851) C. Watt. Decomposing saline substances. 8d

422 (1851) W. Gossage. Manufacture of alkaline carbonates. 10d

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*Any of these specifications may be obtained by post, by remitting the cost price, *plus* postage, to Mr. H. Reader Lack, Comptroller of the Patent Office, Southampton Buildings, Chancery Lane, London, W.C. The amount of postage may be calculated as follows:—

If the price does not exceed 8d.	½d.
Above 8d., and not exceeding 1s. 6d.	1d.
„ 1s. 6d., „ „ 2s. 4d.	1½d
„ 2s. 4d. „ „ 3s. 4d.	2d.

VIII.—GLASS, POTTERY, AND EARTHENWARE.

1884

13119 F. Mason and J. Conquerer. Manufacture of rolled plate glass. 6d

1885.

1633 G. W. Wilkinson. Gas kilns for burning glass, china, pottery ware, etc. 6d

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

1884.

11292 A. M. Clark—Communicated by G. von Koch and R. Adamy. Treating cement in order to make it suitable for stereochromatic printing. 2d

1885.

3932 J. Homan. Improvements in fireproof floors. 6d

4151 W. E. Heys—Communicated by E. Ladewig. Manufacture of fire and waterproof boards or paper from asbestos. 4d

5538 P. Walker. Making lithographic stones, baths, sinks, etc., *of Portland cement.* 2d

5579 A. Diss and H. Goodey. Manufacture of fireproof hearths and other fireproof parts of buildings. 4d

REPRINTS.

160 (1857) F. Walton. Plastic compositions. 6d

1211 (1857) F. Walton. Plastic compositions. 4d

X.—METALLURGY, MINING, ETC.

1884.

10880 J. Taylor and J. Taylor. Preparing iron and steel sheets, etc., *for coating them with copper and alloys of copper.* 4d

11196 H. E. Newton—Communicated by J. E. Verdié. Manufacture of steel and cast iron. 4d

11701 H. M. Whitehead. Means of extracting gold or silver *from their ores, and apparatus connected therewith.* 6d

15880 F. Radcliffe. Improvements in open hearth gas furnaces for the manufacture of steel. 6d

1885.

5642 L. A. Groth—Communicated by C. G. Dahlerus. Method of extracting copper, nickel, cobalt, silver, or gold from their ores. 2d

5616 C. Scheibler. Manufacture of steel and iron, and obtaining by-products of such manufacture. 4d

REPRINT.

12373 (1818) W. Clay. Rolling iron, etc. 6d

XI.—FATS, OILS, AND SOAP MANUFACTURE.

1884.

11305 S. M. Dimbleby. The manufacture of soap and saponaceous compounds. 2d

11403 H. H. Lake—Communicated by G. G. B. Casero. Process for the extraction of oil and the production of meal from flax and other seeds. 4d

11639 J. Hopkinson. Improvements in lubricants. 2d

XII.—PAINTS, VARNISHES, AND RESINS.

1884.

11660 H. H. Lake—Communicated by L. Brown. Coating or covering wood or other surfaces, and paint or composition therefor. 4d

11930 J. Connor. An improved black pigment. 2d

12280 A. Parkes. The production of compounds capable of being employed for the coating or covering of metallic, animal, vegetable, or other surfaces. 4d

11776 A. Parkes. The production of compounds capable of being employed for coating metallic and other surfaces. 4d

XIII.—TANNING, LEATHER, GLUE, AND SIZE.

1884.

11288 A. M. Clark—Communicated by E. de Solminihac. Improved *apparatus for use in tanning hides and skins.* 6d

11586 W. A. Barlow—Communicated by La Société de Fabrication Perfectionée d'Extraits Tannique. Process and apparatus for the manufacture of extracts of tannin. 6d

1885.

5359 W. R. Lake—Communicated by J. B. Duprot. Impermeable *and preservative compositions for use in the preparation* of leather, etc. 4d

REPRINT.

745 (1855) L. Cornides. Waterproofing leather. 8d

XVI.—BREWING, WINES, SPIRITS, ETC.

1884.

10870 C. D. Abel—Communicated by J. A. F. Bang and M. C. A. Ruffin. Process and apparatus for purification of alcohol. 6d

11297 T. Etty. Non-intoxicating beer, and process for manufacturing the same. 4d

11407 H. H. Lake—Communicated by A. F. le Myé and W. de Peyster. Apparatus for treating ligneous substances for the production of glucose and alcohol. 6d

12105 J. C. Mewburn—Communicated by La Société "La Vinicole." The manufacture of champagne or sparkling wines. 2d

1885.

5139 C. D. Abel—Communicated by C. Meyer. Preventing subsidiary fermentations in substances employed in the various manufactures based on fermentation. 4d

XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, ETC.

1884.

8715 P. A. Maignen, London. Method of softening water. 6d

10973 J. Carter. Filtering and purifying water, sewage and other liquids; separating the liquids from the solids, treating *the solids for manure, and other methods of purifying rivers.* 8d

11641 E. J. Leveson and J. W. Slater. The preparation of agents to be used in the treatment of sewage, etc., and the treatment of such matters. 4d

15701 W. Noble. Means of consuming smoke in steam boiler furnaces. 6d

1885.

3551 C. Jeffs. Preserving fish in a fresh condition. 2d

4677 T. Stoner and J. Turton. A combined disinfecting and fumigating compound. 2d

5661 A. Ramognino. A new or improved composition of chocolate. 2d

XIX.—PAPER, PASTEBOARD, ETC.

1884.

10240 A. Wilkinson. Treating vegetable material for the manufacture of pulp suitable for paper, millboards, etc. 4d

10100 S. Law. Method and apparatus for neutralising the acid in extract fibre. 6d

11816 A. Mitscherlich. The manufacture of paper pulp. 8d

1885.

5610 H. H. Leigh—Communicated by C. Eichorn and T. Mohr. The softening of vegetable parchment. 2d

XXI.—EXPLOSIVES, MATCHES, ETC.

1884.

10986 T. Wilkens—Communicated by T. Potry and O. Fallenstein. An improved explosive compound. 4d

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